

1       1. A method of detecting a characteristic of an  
2 optical device having at least two optical inputs and two  
3 optical outputs comprising:

4                 coupling a light source to said device through a  
5 switch which has at least one input and at least two  
6 outputs, the at least two outputs of said switch being  
7 coupled to the two inputs of said device; and  
8                 coupling each of the two outputs of said device  
9 to a different detector.

1       2. The method of claim 1 including coupling said  
2 light source to said switch through a polarization  
3 controller.

1       3. The method of claim 2 including coupling said  
2 light source to said optical switch through a polarization  
3 controller that generates the four Mueller polarization  
4 states.

1       4. The method of claim 1 including scanning the four  
2 Mueller polarization states to the first input and  
3 detecting both outputs of said device.

1       5. The method of claim 4 including after scanning  
2 the four polarization states to the first input and both  
3 outputs, scanning the four polarization states to the  
4 second input and detecting both outputs.

1       6. The method of claim 1 including providing a light  
2 output to said detectors simultaneously.

1       7. A test apparatus for detecting a characteristic  
2 of an optical device having at least two optical inputs and  
3 two optical outputs, said apparatus comprising:

4              a light source;  
5              a 1 x at least 2 optical switch coupled to  
6 receive light from said light source, said optical switch  
7 having at least two outputs coupled to said at least two  
8 optical inputs of said device; and  
9              at least two photo detectors each of which is  
10 coupled to a different one of said at least two optical  
11 outputs.

1       8. The apparatus of claim 7 including a polarization  
2 controller coupled between said light source and said  
3 optical switch.

1       9. The apparatus of claim 8 wherein said  
2 polarization controller successively generates the four  
3 Mueller polarization states.

1       10. The apparatus of claim 8 wherein said optical  
2 switch provides a signal to a first optical input of said  
3 device and outputs are detected at each of said photo  
4 detectors simultaneously.

1       11. A method comprising:  
2                 providing a light source to a polarization  
3 controller;  
4                 generating different polarization states from  
5 said polarization controller;  
6                 successively providing said polarization states  
7 to a first input port of a device under test;  
8                 simultaneously providing outputs from said device  
9 under test to at least two different photodetectors; and  
10                 thereafter successively providing different  
11 polarization states to a second input port of said device  
12 under test and simultaneously detecting output signals from  
13 two different output ports of said device under test.

1       12. The method of claim 11 including generating the  
2 four Mueller polarization states.

1           13. The method of claim 11 including providing a 1 x  
2 at least 2 optical switch between said polarization  
3 controller and the at least two input ports of said device  
4 under test.

1           14. An optical measurement system comprising:  
2                 a light source;  
3                 a polarization controller to produce different  
4 polarization states;  
5                 at least two photodetectors; and  
6                 an element to successively provide different  
7 polarization states to a first input port of a device under  
8 test and to simultaneously provide outputs from said device  
9 under test to said photodetectors and to thereafter  
10 successively provide different polarization states to a  
11 second input port of a device under test and simultaneously  
12 detect output signals from two different output ports of  
13 said device under test.

1           15. The system of claim 14 wherein said controller is  
2 a Mueller polarization state generating controller.

1           16. The system of claim 15 wherein said element  
2 includes a 1 x at least 2 optical switch.

1       17. An optical measurement system comprising:  
2            a light source;  
3            a polarization controller coupled to said light  
4 source to produce at least four Mueller polarization  
5 states;  
6            a 1 x at least 2 optical switch coupled to the  
7 output of said polarization controller and connectable to  
8 at least two input ports of a device under test; and  
9            at least two photo detectors connectable to  
10 different ones of at least two output ports of a device  
11 under test.

1       18. The system of claim 17 wherein said first and  
2 second photo detectors are arranged to simultaneously  
3 detect outputs from said device.

1       19. The system of claim 18 wherein said controller is  
2 set to successively generate said four Mueller polarization  
3 states.